



What you hear shapes how you think: Sound patterns change level of construal[☆]



Jochim Hansen^{a,*}, Johann Melzner^b

^a Department of Psychology, University of Salzburg, Austria

^b Department of Psychology, Ludwig-Maximilians-University of Munich, Germany

HIGHLIGHTS

- Auditory cues related to distance and abstractness trigger abstract construal.
- Auditory cues related to proximity and concreteness trigger concrete construal.
- Distance/abstractness cues in sounds instigate the formation of broader categories.
- Distance/abstractness cues increase preference for global visual patterns.
- Also, these cues increase the weight placed on aggregate vs. single information.

ARTICLE INFO

Article history:

Received 28 January 2014

Revised 30 April 2014

Available online 10 May 2014

Keywords:

Sound

Music

Psychological distance

Abstractness

Construal level

ABSTRACT

Psychological distance and abstractness primes have been shown to increase one's level of construal. We tested the idea that auditory cues which are related to distance and abstractness (vs. proximity and concreteness) trigger abstract (vs. concrete) construal. Participants listened to musical sounds that varied in reverberation, novelty of harmonic modulation, and metrical segmentation. In line with the hypothesis, distance/abstractness cues in the sounds instigated the formation of broader categories, increased the preference for global as compared to local aspects of visual patterns, and caused participants to put more weight on aggregated than on individualized product evaluations. The relative influence of distance/abstractness cues in sounds, as well as broader implications of the findings for basic research and applied settings, is discussed.

© 2014 Elsevier Inc. All rights reserved.

Introduction

Music has a huge impact on people's lives: It alters moods, energizes, chills or relaxes. A lot of research has demonstrated that music has the potential to change feelings and emotions (e.g., Blood & Zatorre, 2001; Egermann et al., 2011; Saarikallio, Nieminen, & Brattico, 2013; Sandstrom & Russo, 2013). In addition, music influences cognitions, such as recollections from episodic memory (e.g., Janata, 2009). So far, however, little research has investigated how musical sounds change the way people think. The present research aims to fill this gap. More

specifically, building on the influence of psychological distance (Liberman & Trope, 2008; Trope & Liberman, 2000, 2003, 2010) and abstractness primes (Förster, 2011; Förster, Liberman, & Kuschel, 2008; Freitas, Gollwitzer, & Trope, 2004) on level of mental construal, we propose that musical sound parameters that are related to distance (vs. proximity) and abstractness (vs. concreteness) cause individuals to mentally construe their subjective world more abstractly (vs. concretely), with consequences for judgments and decision making.

Psychological distance and level of construal

Construal level theory (CLT, Trope & Liberman, 2003, 2010) proposes that psychological distance from objects (i.e., temporal, spatial, social, or probabilistic) enhances the tendency to build more high-level construals, whereas proximity enhances the tendency to build more low-level construals of objects. High-level construals are less diverse and include fewer details and less contextual information than low-level construals. High-level construals are abstract mental representations that extract the essential, core aspects of objects. Moving from a

[☆] Both authors contributed equally to this research. The authors thank Bernhard Fischer for his help with engineering the audio files as well as Anita Todd, Yaacov Trope, Sam Maglio, and two anonymous reviewers for helpful comments on an earlier version of this article.

* Corresponding author at: Department of Psychology, University of Salzburg, Hellbrunnerstr. 34, A-5020 Salzburg, Austria.

E-mail address: jochim.hansen@sbg.ac.at (J. Hansen).

concrete representation of an object to a more abstract representation involves retaining central features and omitting features that may vary without significantly changing the meaning of the represented information.

Low-level, concrete construals, in contrast, consist of rich and specific details. They emphasize subordinate (vs. superordinate) features of an object, focusing on local (vs. global) perceptual elements, and processing information in a detailed-oriented (vs. holistic) manner (e.g., Shapira, Liberman, Trope, & Rim, 2012; Trope & Liberman, 2000).

By now, a huge body of evidence provides support for the relationship between psychological distance and high-level construal. For example, increased distance was found to facilitate perception of global, abstract visual patterns relative to local, concrete patterns (Liberman & Förster, 2009). It also led participants to include more objects in a category, indicating that participants thought about the objects in rather superordinate, abstract terms (Liberman, Sagristano, & Trope, 2002). Moreover, distance causes individuals to use generalized information when evaluating objects (Ledgerwood, Wakslak, & Wang, 2010). Taken together, these results indicate that psychological distance causes people “to see the forest instead of the trees.”

Additionally, abstract versus concrete construal can be procedurally primed (Förster, 2011; Förster et al., 2008; Freitas et al., 2004; Fujita, Trope, Liberman, & Levin-Sagi, 2006; Hansen, Kutzner, & Wänke, 2013; Hansen & Wänke, 2010; Wakslak & Trope, 2009). For example, individuals who had focused on the whole gestalt of a state map demonstrated more global thinking in an unrelated task than individuals who had focused on a specific detail of the same map (Friedman, Fishbach, Förster, & Werth, 2003). In the present research, we tested whether distance-related and abstractness-related sound primes, as well, affect construal level across modalities.

If sound cues indeed have the potential to change the way individuals think, this will shed light on one powerful aspect of music that has been neglected so far: Rather simple auditory cues commonly encountered almost everyday in music could possibly influence higher-order cognitions. It would further shed light on the nature of abstraction: With very slight and simple stimuli, level of construal could be changed quite easily—even across modalities—demonstrating that level of construal is a very flexible tool of the human mind.

Three factors that affect distance perception and construal level

The present research focuses on three sound factors that are related either to psychological distance (i.e., reverberation¹ and novelty) or to abstractness (i.e., segmentation).

Reverberation

People almost automatically use reverberation as a cue in auditory distance perception (Mershon & King, 1975). Unlike intensity of sound (which is considered a relative cue of distance perception), reverberation is an absolute cue for perceived distance because it provides the perceiver with information about distance from the source of a sound that can be translated into absolute values, such as feet or meters (Mershon & King, 1975). The effect of reverberation on judgments of spatial distance has been demonstrated even when the intensity and the frequency spectrum of the sound were held constant (von Békésy, 1960). In the present study, we varied reverberation as one sound factor affecting psychological distance.

Novelty

Novelty (vs. familiarity) is considered another cue of psychological distance (Liberman & Trope, 2008; Trope & Liberman, 2000, 2003,

2010). As direct experience with an object or events decreases, psychological distance increases. Accordingly, it has been demonstrated that asking participants to reflect about novel (vs. familiar) events increased abstract construal of actions, which led to more global perception (Förster, Liberman, & Shapira, 2009). A recent model on global versus local processing (the GLOMO^{sys}, Förster & Dannenberg, 2010) even considers novelty as one of the main factors that trigger global processing.

In the present research, we used harmonic modulation to manipulate novelty. That is, we presented combinations of musical keys that provide perceivers with either a very familiar sound pattern or a more unusual one. More specifically, participants listened to the two alternating chords C major and G major (i.e., a familiar combination), or to the two alternating chords C major and F# major (i.e., an unusual, novel combination). C major and G major are the tonic and dominant, respectively, of the C major key and thus share the same tonal material. C major and F# major, in contrast, do not share a common key signature. Thus, combining C major and F# major results in a feeling of unfamiliarity (Krumhansl, 1979) and therefore in a perception of more psychological distance.

Segmentation

Segmentation is directly related to level of construal. Compared to a low segmentation, a high segmentation psychologically translates into the perception of more and smaller units that correspond with a more fine-grained, concrete construal (Henderson, Fujita, Trope, & Liberman, 2006; Maglio & Trope, 2011). For instance, in one study, participants listened to a song and were asked to focus on either its “entirety or whole gestalt of composition and performance” or to “the details of the composition and performance” (Förster, 2011, Study 1). The detailed-oriented processing strategy triggered more concrete, local processing compared to the more holistic strategy.

We manipulated segmentation in the present research by varying the metrical fragmentation of the sound patterns. Some participants were presented with chords that were played only once in each measure. These participants should perceive the measure as one single unit. Other participants heard the chords four times per measure. These participants should perceptually divide the measure into fewer and smaller parts. We expected cross-modal effects: The more segmented presentation (the “auditory trees”) should cause a lower level of construal than the more holistic presentation (the “auditory forest”) in a different task.

The present research

Participants of the present study listened to one of five sound samples throughout the whole study. One sound was designed to trigger concrete construal: It included factors that are related to psychological proximity (i.e., no reverberation and C/G major chords), and it was metrically segmented. We refer to this sound as “concrete sound.” Another sound was designed to induce comparably more abstract construal. This sound included reverberation, used C/F# major chords, and had no metric segmentation. We refer to this sound as “abstract sound.” We hypothesized that this sound would induce the highest level of construal. Three further sounds varied only one of the cues. We hypothesized that, compared to the concrete sound, these sounds would also increase level of construal but to a lesser degree than the abstract sound.

Level of construal is a heterogeneous construct that can involve perceptual, conceptual, linguistic, goal-related, or attitude-related aspects of abstraction (Burgoon, Henderson, & Markman, 2013). This implies that level of construal cannot be measured directly; only its diverse facets can be assessed. Different measures of construal level refer to its different facets. In the present study, we used three different measures to investigate if sound parameters have an impact on construal level. Specifically, we assessed category breadth, preference for global (vs. local) visual patterns, and reliance on aggregated rather than individualized evaluations of objects in attitude judgments. Although

¹ For definitions of the technical terms used in this paper, see Appendix A.

Download English Version:

<https://daneshyari.com/en/article/947807>

Download Persian Version:

<https://daneshyari.com/article/947807>

[Daneshyari.com](https://daneshyari.com)